

2019 Annual Water Quality Report

Water Quality & Operations Division

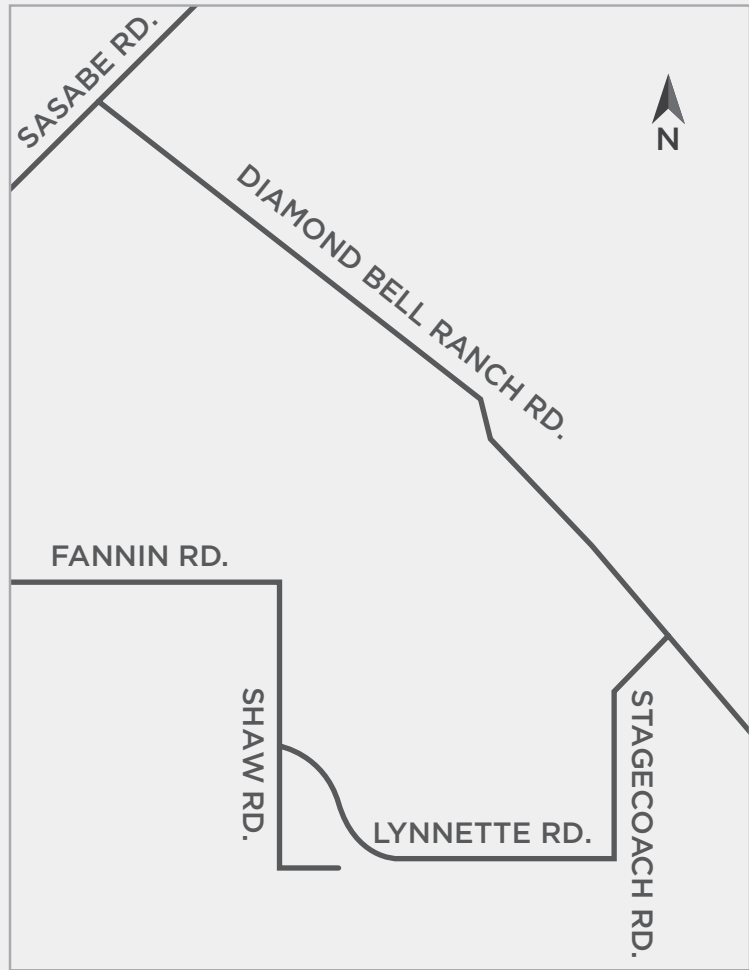
Diamond Bell Ranch PWS AZ0410159



A proud part of the City of Tucson



This Annual Water Quality Report provides information on your drinking water. The United States Environmental Protection Agency (EPA) requires that all drinking water suppliers provide a water quality report to their customers on an annual basis. This report also contains important information on the quality of your water and contact information you may wish to use.



If you are a non-English speaking resident, we recommend that you obtain a copy in Spanish by calling (520) 791-4331 or speak with someone about this report. Para nuestros clients de habla Español: Este informe contiene informacion muy importante sobre la calidad de su agua beber. Traduscalo o hable con alguien que lo entienda bien. Para obtener una copia de este reporte en Español, llame al (520) 791-4331.

WHERE DOES MY WATER COME FROM?

Diamond Bell Ranch is a small community water system located south and east of Sasabe Road and Diamond Bell Ranch Road respectively, with 211 services supplying approximately 600 persons with water from two wells, F-002A and E-030A. The newer well, E-030A, has been in service since 2003. The most recent upgrades from 2006 include the installation of a new 250,000-gallon storage tank and a variable speed booster station. The new storage tank enhances fire flow protection to the residents when power is interrupted

WERE THERE ANY CONTAMINANTS DETECTED IN MY DRINKING WATER?

Tucson Water continuously monitors the drinking water that is delivered to you to comply with regulations set by the EPA. In addition to this required monitoring, Tucson Water performs a great deal of discretionary monitoring in order to provide both staff and customers with additional water quality information. We are pleased to report that the results from the monitoring conducted in 2019 met all standards for safe drinking water.

In most cases, the minimum detection level of a contaminant is well below the EPA regulatory limit for that contaminant. The table lists the contaminants that were detected in the required drinking water monitoring. To compare the detected amount with the highest level allowed by the EPA, refer to the Maximum Contaminant Level (MCL) column in the table. The vast majority of regulated contaminants were not detected in the drinking water delivered by Tucson Water and those non-detected results were not included in the table. For a complete list of all EPA regulated contaminants, contact the EPA at 1-800-426-4791 or visit the EPA website at www.epa.gov/sites/production/files/2016-06/documents/npwdr_complete_table.pdf

For accommodations, materials in accessible formats, foreign language interpreters, and/or materials in a language other than English, please contact Tucson Water at (520) 791-4331 or (520) 791-2639 for TDD.

WHY ARE THERE CONTAMINANTS IN MY DRINKING WATER?

All drinking water, including bottled water, may reasonably be expected to contain small traces of some contaminants. Tucson’s groundwater contains dissolved minerals and organic compounds, which have been leached from the soil, rock, sediments, and plant materials through which the water travels. One would expect to find beneficial minerals such as calcium and magnesium, harmless minerals such as chloride, bicarbonate, and sulfate, and metals such as iron, copper, arsenic, and lead, which may be either beneficial or harmless at low concentrations, but harmful at high concentrations. In addition to these naturally occurring contaminants, our groundwater may contain contaminants resulting from industrial or domestic activities. For this reason, water utilities must currently monitor for approximately 90 regulated contaminants. The following language is required by the EPA to appear in this report, some of which may not be applicable to deep groundwater wells, the primary source of the Tucson Water supply:

Contaminants that may be present in source water can include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage, septic systems, agricultural livestock, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA regulations limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Bottled water may come from either a surface water source or groundwater source, and may be treated minimally or extensively. For information on the quality of your bottled water, contact the water bottling company.

EXPLANATION OF THE DATA PRESENTED IN THE DETECTED CONTAMINANTS TABLE:

Tucson Water routinely monitors for contaminants in your drinking water as specified in the National Primary Drinking Water Standards. Monitoring results for the period of January 1 to December 31, 2019, or from the most recent period, are included in the table. Certain contaminants are monitored less than once a year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination.

Detected Contaminants Table

Contaminant	Sample Year	Maximum Result	Range	MCL	MCLG	Units	Major Sources of Contaminat
Disinfection By-Products							
Haloacetic Acids (HAA5)							
HAA5 Locational Running Annual Average (LRAA)	2019	2.9	2.8 - 2.9	60	None	ppb	By-product of chlorination
Total Trihalomethanes (TTHM)							
TTHM Locational Runnin Annual Average (LRAA)	2019	19.6	17.3 - 19.6	80	None	ppb	By-product of chlorination
Inorganics							
Arsenic	2019	3.7	3.1 - 3.7	10	0	ppb	Natural deposits, runoffs
Barium	2019	0.028	0.026 - 0.028	2	2	ppm	Natural deposits, industrial use
Chromium (Total)	2019	1.3	<1 - 1.3	100	100	ppb	Natural deposits, steel and pulp mills
Fluoride	2019	0.3	0.21 - 0.3	4	4	ppm	Natural deposits
Nitrate (as N)	2019	1.6	1.5 - 1.6	10	10	ppm	Natural deposits, septic tanks, agriculture, sewage
Sodium	2019	29	28 - 29	None	None	ppm	Natural deposits
Radioactive Chemicals							
Gross Alpha Emitters	2016	4.8	4.4 - 4.8	15	0	pCi/L	Natural deposits

Contaminant	Sample Year	No. of Samples Above Action Level	90th Percentile Value	Action Level	Action Level Goal	Units	Major Sources of Contaminat
Lead	2019	None	1	15	0	ppb	Corrosion of household plumbing systems, erosion of natural deposits
Copper	2019	None	0.133	1.3	1.3	ppm	Corrosion of household plumbing systems, erosion of natural deposits

Disinfectant	Year Sampled	Annual Average	Monthly Average Range	MRDL	MRDLG	Units	Major Sources of Contaminat
Chlorine	2019	0.76	0.51 - 0.94	4	4	ppm	Disinfection additive used to control microbes

DETAILED INFORMATION ON DETECTED CONTAMINANTS

Haloacetic Acids (HAA5) are a group of chemicals that are formed along with other disinfection by-products when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The regulated haloacetic acid compounds, known as HAA5, are monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid. EPA has established an MCL of 60 parts per billion (ppb) for HAA5. Compliance with the HAA5 standard is based on the Locational Running Annual Average (LRAA) concentration. The maximum LRAA for HAA5 in 2019 was 2.9 ppb (the MCL is 60 ppb).

Total Trihalomethanes (TTHMs) are formed when chlorine combines with naturally occurring organic material in water. Since the level of organic matter in our groundwater is extremely low, these compounds are found at very low concentrations. The compounds which make up the TTHMs include bromodichloromethane, bromoform, chlorodibromomethane, and chloroform. Compliance with the TTHM standard is based on the Locational Running Annual Average (LRAA) concentration. The maximum LRAA for TTHMs in 2019 was 19.6 ppb (the MCL is 80 ppb).

Arsenic is a naturally occurring substance commonly found in groundwater in the southwestern United States. While your drinking water meets EPA’s standard for arsenic, it does contain low levels of arsenic. EPA’s standard balances the current understanding of arsenic’s possible health effects against the cost of removing arsenic from drinking water. EPA continues to research the health effect of low levels of arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems. The highest arsenic concentration detected during 2019 was 3.7 ppb (the MCL is 10 ppb).

Barium occurs naturally at very low concentrations in our groundwater. The highest barium value during 2019 was 0.028 parts per million (ppm) (the MCL is 2 ppm).

Chromium (Total) is found naturally in rocks, plants, soil and volcanic dust, and animals. Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis. The highest total chromium concentration detected during 2019 was 1.3 ppb (the MCL is 100 ppb).

Fluoride is an important naturally occurring mineral that helps to form healthy teeth and bones. A concentration of 1 ppm is considered optimum. At concentrations above 2 ppm, fluoride can cause mild discoloration of teeth, and exposure at above the MCL of 4 ppm can cause both severe discolorations of teeth and over many years of exposure, bone disease. The highest concentration of fluoride detected during 2019 was 0.3 ppm (the MCL is 4 ppm).

Nitrate is a form of nitrogen and an important plant nutrient. Tucson Water performs more frequent monitoring of wells high in nitrate for extra assurance that action can be taken when approaching the MCL. Nitrate in drinking water at levels above 10 ppm is a health risk for infants less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, ask advice from your health care provider. The highest concentration for nitrate during 2019 was 1.6 ppm (the MCL is 10 ppm).

Sodium is the sixth most abundant element on Earth and is widely distributed in soils, plants, water, and food. A goal of 2,300 mg/day dietary sodium has been proposed by several government and health agencies. Drinking water containing between 30 and 60 ppm would contribute only 2.5% to 5% of the dietary goal if tap water consumption is 2 liters per day. Currently, there is no MCL for sodium in drinking water. The recommended EPA guidance level for individuals on a very low sodium diet (500 mg/day) is 20 ppm in drinking water. The highest sodium concentration in Tucson water during 2019 was 29 ppm. Drinking water does not play a significant role in sodium exposure for most individuals. Those who are under treatment for sodium-sensitive hypertension should consult with their health care provider regarding sodium levels in their drinking water supply and the advisability of using an alternative water source or point-of-use treatment to reduce the sodium.

Gross Alpha Emitters are a measure of radioactivity due to naturally occurring minerals in groundwater. The highest concentration for gross alpha emitters during 2019 was 4.8 picocuries per liter or pCi/L (the MCL is 15 pCi/L).

Lead and Copper are naturally occurring metals which are generally found at very low levels in source waters. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Tucson Water is responsible for providing high quality drinking water, but cannot control the variety of materials used in private plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water

The required lead and copper monitoring was performed during 2019. The 90th percentile value was 1 ppb for lead (the Action Level is 15 ppb) and 0.133 ppm for copper (the Action Level is 1.3 ppm). Both lead and copper 90th percentiles were below their respective the the Action Level.

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Chlorine Residual Disinfection is maintained throughout the distribution system. Approximately 1 ppm of chlorine is added to the drinking water supply at well sites, reservoirs and other facilities to provide assurance that water delivered to customers will remain free of microbiological contamination. This also ensures that the water meets microbiological drinking water standards from the time it is pumped from the ground until it reaches the customer's tap. Chlorine Residual Disinfectant is measured from sample stations where the bacteriological samples are collected monthly. The annual chlorine residual disinfectant is calculated using the monthly chlorine averages for the past 12 months. The annual average for twelve months of 2019 was 0.76 ppm. The maximum monthly average was 0.94 ppm (the Maximum Residual Disinfectant Limit or MRDL is 4 ppm.)

As a Tucson Water customer, you have the right to know that this data is available. If you are interested in examining the results, please contact the Water Quality and Operations Division at (520) 791-2544.



SOURCE WATER ASSESSMENT PROGRAM (SWAP)

The Arizona Department of Environmental Quality (ADEQ) has completed a source water assessment for Tucson Water drinking water wells. This assessment reviewed the adjacent land uses that may pose a potential risk to the water sources. These risks include, but are not limited to, gas stations, landfills, dry cleaning, agricultural fields, wastewater treatment plants, and mining activities. The water sources for this system are categorized as "low risk of contamination from human activities."

Based on the information currently available on the hydrogeological settings of and the adjacent land uses that are in the specified proximity of the drinking water source(s) of this public water systems, the Arizona Department of Environmental Quality has given us a low risk designation for the degree to which this public water system drinking water source(s) are protected. A low risk designation indicates that most source water protection measures are either already implemented, or the hydrogeology is such that the source water protection measures will have little impact on protection.

Tucson Water ensures the safety of our drinking water by conducting regular monitoring of all sources. If any contamination approaches the drinking water MCL, the source is removed from service. Residents can help protect our water sources by practicing good septic system maintenance, limiting pesticide and fertilizer use, and by taking hazardous household chemicals to the Household Hazardous Waste Program locations (visit www.tucsonaz.gov/es/household-hazardous-waste or call (520) 791-3171). Source Water Assessments on file with the ADEQ are available for public review. You may obtain a copy by contacting the Arizona Source Water Coordinator at (602) 771-4597.

WERE THERE ANY MONITORING FAILURES OR VIOLATIONS?

At the end of each quarter, Tucson Water conducts an internal audit of compliance monitoring records to verify that all required monitoring has been completed and reported to the State. During 2019, there were no health-based or monitoring violations.

HOW IS OUR DRINKING WATER TREATED?

The groundwater delivered by Tucson Water meets all drinking water standards without treatment. However, approximately 0.8 to 1.2 parts per million (ppm) of chlorine residual is maintained in the drinking water supply to provide assurance that water delivered to customers will remain free of microbiological contamination. This also ensures that the water meets microbiological drinking water standards from the time it is pumped from the ground until it reaches the customer's tap.

DRINKING WATER TERMS AND DEFINITIONS:

Action Level

The concentration of a contaminant, which, if exceeded, triggers a treatment or other requirement which a water system must follow.

Entry Point to the Distribution System (EPDS)

All water sources are monitored at the entry point to the distribution system before the first customer but after any required treatment.

Maximum Contaminant Level (MCL)

The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. If a contaminant is believed to cause health concerns in humans, then the MCL is set as close as practical to zero and at an acceptable level of risk. Generally, the maximum acceptable risk of cancer is 1 in 10,000 with 70 years of exposure.

Maximum Contaminant Level Goal (MCLG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL)

The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG)

The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Parts Per Billion (ppb)

Some constituents in water are measured in very small units. One ppb equals one microgram per liter. For example, one part per billion equals: 2 drops of water in a 15,000 gallon backyard swimming pool, one second of time in 31.7 years, or the first 16 inches of a trip to the moon.

Parts Per Million (ppm)

One ppm equals one milligram per liter or 1,000 times more than a ppb. One part per million equals: 1/4 cup of water in a typical 15,000 gallon backyard swimming pool; or one second of time in 11.6 days.

Picocurie Per Liter (pCi/L)

It is defined as the quantity of radioactive material in one liter which produces 2.22 nuclear disintegrations per minute.



DO I NEED TO TAKE SPECIAL PRECAUTIONS?

While the Safe Drinking Water Act regulations are intended to protect consumers throughout their lifetime, some people may be more vulnerable to infections from drinking water than the general population. These "at-risk" populations include immunocompromised persons such as persons with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and in some cases, elderly people and infants. These people should seek advice about drinking water from the health care providers, EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the EPA's Safe Drinking Water hotline.

WHOM DO I CONTACT FOR MORE INFORMATION?

For more information, questions, or comments on this Tucson Water Quality report, contact the Water Quality & Operations Division at (520) 791-2544 or email cynthia.leo@tucsonaz.gov

Tucson's Mayor and Council set policy and direction for Tucson Water, including those policies that may impact water quality.

Mayor and Council meetings are normally held every other Tuesday and are open to the public. Mayor and Council meeting agendas and other opportunities for public comments are published at www.tucsonaz.gov/gov/meeting-schedules-and-agendas

Tucson Water customers may leave a message for the Mayor and Council at (520) 791-4201.

Tucson Water's Water Quality Information Net program provides timely information about the quality of tap water in your neighborhood at www.tucsonaz.gov/water/about-your-water-quality. For questions, comments, or reports on water quality topics in your neighborhood, contact our water quality concerns team at

(520) 791-5945 or email CustomerSupportUnit@tucsonaz.gov

To schedule a tour of Tucson Water's Water Quality Laboratory or a speaker for your organization, contact the Public Information Office at (520) 791-4331 or email pico@tucsonaz.gov

CONTACT INFORMATION:

Tucson Water Public Information Office	(520) 791-4331
Tucson Water Quality & Operations Division	(520) 791-2544
Tucson Water Customer Service/Billing	(520) 791-3242
Tucson Water 24-hour Emergency	(520) 791-4133
City of Tucson TTY#	(520) 791-2639
USEPA Safe Drinking Water Hotline	1-800-426-4791

USEPA Website

[www.epa.gov/ground-water-and-drinking-water/
safe-drinking-water-information](http://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information)

Si usted desea este documento escrito en Español,
por favor llame al (520) 791-4331.

